

Remarks

Reconsideration of this application in view of the amendments made to the claims and the following remarks is respectfully requested.

Phone Interview

Applicant would like to thank the Examiner for participating in a June 3, 2003, phone interview in which the rejection of claim 1 was discussed, as well as U.S. Patent No. 5,759,745 to Hollingsworth.

Claim Amendment

Claim 1 has been amended to substitute the phrase "region resistant to metastable degradation" for the phrase "stabilized region." No new matter has been added by this amendment, and support for this amendment may be found in the Summary of the Invention Section at page 3, lines 16-21, as well as page 4, lines 6-10, which state that one of the purposes of the invention is to provide silicon films that are resistant to metastable degradation. Additional support may be found at page 5, lines 21-22, and page 6, lines 1-6, which state that an excess metastable region ($M(Si-H)_2$) is created by illuminating an amorphous silicon film layer to blue or UV light. Further support may be found in the claims as originally amended. For example, original claim 1 recited "[a] method of producing an amorphous hydrogenated silicon film *resistant to metastable degradation*..."

Rejection under 35 U.S.C. § 112

Claim 1 was rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Specifically, the Office Action stated that the phrase "stabilized region" recited in claim 1 is not supported by the specification.

Claim 1 has been amended to substitute the phrase "region resistant to metastable degradation" for the phrase "stabilized region." As noted in the Claim Amendment Section and reiterated for the purpose of this rejection, this amendment is fully supported by the

application as originally filed. Therefore, Applicant respectfully requests that the rejection under 35 U.S.C. § 112, first paragraph, be withdrawn in view of this amendment.

Allowable Subject Matter

The Examiner stated that claims 2-6 and 8-19 were objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 1, upon which claims 2-6 and 8-19 depend, has now been amended to overcome the rejection under 35 U.S.C. § 112, first paragraph, and is believed to now be allowable. Therefore, it is respectfully requested that this objection to claims 2-6 and 8-19 also be withdrawn.

In the statement of reasons for the indication of allowable subject matter, the Examiner stated that Hollingsworth teaches depositing an amorphous silicon film, which has an exposed surface, on a substrate; illuminating the film with ultraviolet light to form a light damaged region and a stabilized region; and etching an unexposed surface on the amorphous silicon film.

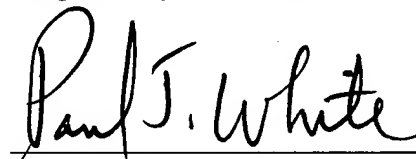
Applicant respectfully submits that Hollingsworth reports exposing *predetermined areas* of the silicon film to UV light, and then etching *unexposed* areas of the film to reveal the substrate surface (col. 4, lines 8-14). The *exposed areas* of Hollingsworth's silicon film are resistant to etching (col. 7, lines 26-27) and *are not removed* during Hollingsworth's etching process. The revealed portions of Hollingsworth's substrate surface may then be treated with a dopant material, such as boron, to form respective P-type regions within his substrate (Hollingsworth, col. 7, lines 55-60). Following this treatment, Hollingsworth's developed photoresist pattern (i.e. the unetched UV light exposed portions) may be removed by techniques well known in the art, or may be allowed to remain in place (par. bridging cols. 7-8). Thus, the UV exposed regions of Hollingsworth's amorphous silicon are either left on the substrate surface or completely removed. In neither case does Hollingsworth's process reveal a region resistant to metastable degradation.

Furthermore, as acknowledged by the Examiner, etching Fukaya's dangling bonds differ from etching a light damaged region as presently claimed. Fukaya reports a method of preparing a photosensor by depositing a layer of p-type amorphous silicon semiconductor, followed by an ohmic contact layer of n-type amorphous silicon, followed by an electrode layer (col. 2, lines 40-52). Fukaya further discloses that portions of his electrode layer are removed by wet etching, and portions of the ohmic contact layer are then removed by etching with CF_4 to expose the p-type silicon layer (col. 3, lines 40-45). The resulting photosensor is then subjected to heat treatment in an oven (col. 3, lines 57-59). Although Fukaya reports that the heat treatment results in the termination of dangling bonds by halogen atoms that remain after etching (par. bridging cols. 4-5), Fukaya does not teach or suggest etching a light damaged region to reveal a region resistant to metastable degradation.

CONCLUSION

All of the claims remaining in this application are in condition for allowance. A notice to that effect is respectfully requested. If there are any remaining questions, the Examiner is requested to contact the undersigned at the number listed below.

Respectfully Submitted,

A handwritten signature in black ink that reads "Paul J. White". The signature is written in a cursive style with a large initial "P".

Paul J. White, Reg.No. 30,436

Dated: June 10, 2003.

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